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APPLICATION NO	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO	CONFIRMATION NO
09 876,661	06 07 2001	Thomas M. Marshall	US 010287	9584

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EXAMINER

ARTMAN, THOMAS R

ART UNIT PAPER NUMBER

2882

DATE MAILED: 01 09 2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/876,661

Applicant(s)

MARSHALL ET AL. 

Examiner

Thomas R Artman

Art Unit

2882

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 07 June 2001.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-10 is/are pending in the application
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 1-7 is/are allowed.
- 6) ☒ Claim(s) 8-10 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 07 June 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____
- 4) ☐ Interview Summary (PTO-413) Paper No(s) _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in-

(1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effect under this subsection of a national application published under section 122(b) only if the international application designating the United States was published under Article 21(2)(a) of such treaty in the English language; or

(2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that a patent shall not be deemed filed in the United States for the purposes of this subsection based on the filing of an international application filed under the treaty defined in section 351(a).

Claims 8 and 10 are rejected under 35 U.S.C. 102(e) as being anticipated by Miller (US 6,373,568).

Regarding claim 8, Miller discloses the claimed structure in his spectral imaging system (Fig.4a), including:

1) an array of LEDs comprising at least one LED in each of a plurality of colors (item 1, detailed in Fig.1, items 10a-j),

2) a condenser lens (Fig.1, item 13) positioned to direct the combined light output of the array of LEDs to a target light guide (item 14a), and

3) an array of light sensors (digital camera, item 61 of Fig.4a), where each sensor is associated with a group of LEDs, and each are positioned to intercept and measure at least a portion of the light output of its associated LEDs.

Art Unit: 2882

With respect to claim 10, Miller's illumination portion includes:

1) means for supplying electrical current to the LED array (Fig.4a, item 40, details in Fig.3), whereby said LEDs in each said color have a light output, and the array has a combined light output,

2) means for comparing the measured light output for each color to a respective desired light output for each color (Fig.3), and

3) means for adjusting the electrical current (Fig.3) to the LEDs in each color based on said comparison, whereby a desired combined light output may be achieved.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claim 9 is rejected under 35 U.S.C. 103(a) as being unpatentable over Miller and in view of Pashley (US 6,127,783).

Miller does not specifically state that his light sensors are associated with a group of three LEDs. However, one skilled in the art would recognize that the red, green and blue sensors in the digital camera pixels will be associated with as many red, green and blue LEDs as are used in the illumination device. Miller's illumination portion can have many colored LEDs within the visible spectrum, and there are not necessarily three of the same color present. However, the

Art Unit: 2882

output of Miller's LED luminescent device can be any color within the visible spectrum, and he has control systems to adjust the combined light output.

Pashley discloses an LED illumination device that uses a plurality of red, green and blue LEDs to produce any color within the visible spectrum.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to use Pashley's multiple sets of red, green and blue LEDs in place of Miller's wider range of LED colors to produce the same effect, and the red, green and blue light sensors in each pixel of Miller's digital camera will be associated with three red, three green, and three blue LEDs in the LED array.

Allowable Subject Matter

Claims 1-7 are allowed.

The following is a statement of reasons for the indication of allowable subject matter: the prior art made of record does not teach the combination of claim 1, wherein a LED luminaire provides for:

- 1) a condenser lens positioned to direct the combined light output of an array of LEDs to a target light guide,
- 2) a partially-reflecting element positioned to reflect a portion of the light output from the condenser lens back toward the LED array, and
- 3) a light sensor positioned to intercept and measure at least a portion of the reflected light.

Art Unit: 2882


Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Boenning (US 3,760,174) discloses an LED luminaire of red, green and blue LEDs whose combined light output is channeled to a waveguide; Ryczek (US 5,471,052) discloses an LED luminescent device that samples the combined light output of the LED; McCarthy (US 5,838,451) discloses a spectral measurement device that uses a condenser lens to focus the combined light output onto a surface and measure the reflected light that is reflected back to a photodiode array next to the LED array; Wagner (US 6,157,454) discloses a colorimeter with a combined LED output conducted by total internal reflection to a surface, and similar means is used to direct the reflected light back to a photodiode array.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Thomas R Artman whose telephone number is (703) 305-0203. The examiner can normally be reached on 8am - 5:30pm Monday - Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Robert Kim can be reached on (703) 305-3492. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 308-7722 for regular communications and (703) 308-7722 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-1782.

TRA 
December 31, 2002

